

1-11. (CANCELED)

12. (PREVIOUSLY PRESENTED) A method of diagnosing a machine by detecting ferritic wear particles (3) deposited within oil circulating within the machine, the method comprising the step of:

detecting accumulation of the ferritic wear particles (3) deposited within the oil, circulating within the machine, by a measurement system having a coil (2); and

generating an output signal from the measurement system which is indicative of a ferritic wear particle condition of the machine; and

locating the coil (2) in a lower region of an oil duct (9) of the machine and influencing an inductance of the coil (2) by an element situated opposite the coil (2).

13. (PREVIOUSLY PRESENTED) The method according to claim 12, further comprising the step of situating a toothed wheel (6) opposite the coil (2).

14-16. (CANCELED)

17. (PREVIOUSLY PRESENTED) The method according to claim 12, further comprising the steps of locating an element opposite to the coil (2), and determining, with the measurement system, a rotation speed of the element located opposite the coil (2).

18. (CANCELED)

19. (PREVIOUSLY PRESENTED) A device for diagnosis of a machine by analyzing oil circulating within the machine to detect ferritic wear particles located therein, wherein the device for diagnosis comprises:

a coil core (11) which is located in a lower region of an oil duct (9) with a coil (2) wound around the coil core (11);

a device for providing a measurement condition of the machine being coupled to the coil (2) for receiving an inductance signal therefrom influenced by accumulation of ferritic wear particles (3) adjacent the coil (2), whereby, during operation of the device for diagnosis of the transmission, the ferritic wear particles (3) to be detected accumulate on a surface of the coil (2) and influence the inductance of the coil (2), and hence the output signal therefrom, detected by the device for providing the measurement condition of the machine;

the device for providing the measurement condition of the machine being coupled to an indicator for indicating required servicing of the machine; and

an element is arranged opposite to the coil (2) such that a voltage signal of the coil (2) is pulsed according to a rotation speed of the element arranged opposite to the coil (2).

20. (CURRENTLY AMENDED) The device according to claim [[18]] 19, wherein the measurement system comprises an electronic unit (8) which detects an output signal from the coil (2) having at least two data:

first datum varying, in a pulsed way, from a constant amplitude, and
second datum in a form of a deviation of the amplitude,

where the deviation of the amplitude is attributable to accumulation of the ferritic wear particles (3) and a rotation speed of an element, arranged opposite the coil (2), is calculated from detected pulses.

21. (CANCELED)

[030] ~~As shown in Fig. 1, the electronic unit 8 is connected, in a conventional manner, to a display 12, a computer screen, an indicator, a warning light, etc., to indicate to the operator of the machine or the transmission that servicing of the machine or transmission is desired or necessary.~~